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Kym Moore

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of:

Hye S. CHI et al.

Serial No: 10/633,958

Filed: August 4, 2003

For: DOCUMENT FEEDER DEVICE

Date: September 12, 2006

Confirmation No. 5183

Group Art Unit: 2854

Examiner: Ferguson, Marissa L.

APPEAL BRIEF

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I. REAL PARTY IN INTEREST

Appellant respectfully submits that International Business Machines Corporation is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

Appellant states that no such proceeding exists.

III. STATUS OF CLAIMS

Claims 1-47 are pending and stand rejected. Accordingly, claims 1-47 are on appeal and all applied rejections concerning those claims are herein being appealed.

IV. STATUS OF AMENDMENT

Application Serial No. 10/633,958 (the instant application) as originally filed included claims 1-47. Claims 1-47 are pending. Claims 1-47 are on appeal and all applied prospective rejections concerning claims 1-47 are being appealed herein. All amendments made to the instant application have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention provides a document feeder device. The document feeder device includes a frame and at least one cantilevered roller shaft for advancing a document, where an unsupported end of the at least one cantilevered roller shaft floats, a bearing coupled to the at least one cantilevered roller shaft, and a spring coupled to the frame and the bearing. The document feeder device eliminates the need for a rigid frame to support the unsupported end. This decreases the cost of production by eliminating the need for additional frame hardware and/or more rigid frame hardware. (Abstract.)

Independent claim 1 recites: A document feeder device comprising:

a frame;

at least one cantilevered roller shaft for advancing a document, wherein the at least one cantilevered roller shaft is supported only at one end

a bearing coupled to the at least one cantilevered roller shaft; and

a spring coupled to the frame and the bearing.

Independent claim 10 recites: A document feeder device comprising:

a frame;

at least one cantilevered roller shaft for advancing a document, wherein the at least one cantilevered roller shaft comprises a distal end and a proximal end, and wherein only the proximal end is coupled to the frame such that the distal end floats

a bearing coupled to the at least one cantilevered roller shaft; and

a spring coupled to the frame and the bearing.

Independent claim 20 recites: A printer system comprising:

a frame;

at least one cantilevered roller shaft for advancing a document, wherein the at least one cantilevered roller shaft comprises a distal end and a proximal end, wherein only the proximal end is coupled to the frame such that the distal end floats

a bearing coupled to the at least one cantilevered roller shaft; and

a spring coupled to the frame and the bearing.

Independent claim 32 recites: A method for feeding a document through a printer, the method comprising

providing at least one cantilevered roller shaft in the printer for advancing the document;

coupling only a supported end of the at least one cantilevered roller shaft to a frame of the printer such that an unsupported end of the at least one cantilevered roller shaft floats

coupling a bearing to the at least one cantilevered roller shaft; and

coupling a spring to the frame and the bearing.

Independent claim 40 recites: A method for feeding a document through a printer, the method comprising

providing at least one cantilevered roller shaft in the printer for advancing the document, wherein the at least one cantilevered roller shaft comprises a distal end and a proximal end;

coupling only the proximal end to a frame of the printer such that the distal end floats

coupling a bearing to the at least one cantilevered roller shaft; and

coupling a spring to the frame and the bearing.

Support for independent claims 1, 10, 20, 32, and 40 is found in the original claims; Figure 3, element 108, and page 6, lines 16-20; Figure 5, element 144, and page 8, lines 7-9; Figure 5, element 140, and page 8, lines 5-13; and Figure 6, element 160, and page 9, lines 11-17.

More specifically, referring to claim 1, support for "a frame" is found in Figure 5, element 144, and page 8, lines 7-9.

Support for "at least one cantilevered roller shaft for advancing a document, wherein the at least one cantilevered roller shaft is supported only at one end" is found in Figure 3, element 108, and page 6, lines 16-20.

Support for "a bearing coupled to the at least one cantilevered roller shaft" is found in Figure 5, element 140, and page 8, lines 5-13.

Support for "a spring coupled to the frame and the bearing" is found in Figure 6, element 160, and page 9, lines 11-17.

The features of claims 10, 20, 32, and 40 include various combinations of the limitations of claim 1. Accordingly, support for the limitations of claim 1 described above provide support for the limitations of claims 10, 20, 32, and 40.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellant respectfully seeks review of the following rejections:

1. Claims 1-3, 5-12, 14-17, 19, 20-22, 24-28, 30, 32-42 and 43-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callendrier (U.S. Patent No. 6,122,978) in view of Matsuda et al. (U.S. Patent No. 2002/0020959).

2. Claims 4, 13, 18, 23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callendrier (U.S. Patent No. 6,122,978) in view of Matsuda et al. (U.S. Patent No. 2002/0020959) as applied to claim 1, 10 and 20 above, and further in view of Applicant Admitted Prior Art ("AAPA").

VII. ARGUMENTS

A. Summary of the Applied Rejections

The Final Office Action dated January 26, 2006 rejected claims 1-3, 5-12, 14-17, 19, 20-22, 24-28, 30, 32-42 and 43-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callendrier (U.S. Patent No. 6,122,978) in view of Matsuda et al. (U.S. Patent No. 2002/0020959). In making the rejections, the Examiner stated:

> **Claims 1-3, 5-12, 14-17, 19, 20-22, 24-28, 30, 32-42 and 43-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callendrier (US 6,122,978) in view of Matsuda et al. (US Patent 2002/0020959).**
>
> **Regarding claims 1, 10, 20, 32-34, 40-42, 46 and 47 Callendrier teaches an apparatus and method comprising a mounting arrangement (Column 5, lines 36-40 and Figure 2) and at least one cantilevered roller shaft (20) comprises a distal end and a proximal end for advancing a document (10), wherein the proximal end is coupled to the frame of such that the distal end floats (As shown in Figure 1) and the at least one cantilevered roller shaft is supported only at one end (Figure 1). However, he does not explicitly disclose a bearing coupled to at least one cantilevered roller shaft and a spring coupled to the frame and the bearing. Matsuda et al. teaches an apparatus and methods for feeding sheets with a cantilevered roller (3, 4) with a bearing (10) coupled to the shaft (7) and a spring coupled to a plate (element 9a can be referred to as a frame).**
>
> **It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify the invention as taught by Callendrier to include a bearing and spring as taught by Matsuda et al., since Matsuda et al. teaches that it is advantageous to provide a stable/supported relationship as a biasing force acts upon the shaft...**

The Final Office Action dated January 26, 2006 also rejected claims 4, 13, 18, 23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callendrier (U.S. Patent No. 6,122,978) in view of Matsuda et al. (U.S. Patent No. 2002/0020959) as applied to claim 1, 10 and 20 above, and further in view of Applicant Admitted Prior Art ("AAPA"). In making the rejections, the Examiner stated:

Callendrier and Matsuda et al. both teach the claimed apparatus and method with the exception of a frame comprising a main portion and front portion. AAPA teaches a printer with a front portion (54) and a main portion (56, Page 2, Lines 15-16 and Figure 2). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention as taught by Matsuda et al. to include a main portion and front portion of a printer as taught by AAPA, since AAPA teaches that it is advantageous to provide a stable and a reliable feeding device.

The Examiner stated the following in response to the previous arguments against the 103(a) rejections:

Applicant's arguments filed 11/10/05 have been fully considered but they are not persuasive. With regards to applicant's comments on page 14, paragraph 3, the examiner notes that all the elements in Matsuda et al. are connected and/or coupled including the spring, bearing element and frame. If the elements were not coupled together the invention would not function properly. Also, the specification does not explicitly point out or describe how the spring is connected to the bearing and frame elements and figure 6 does not show an interconnection between the frame and bearing. Therefore, the claims will remain rejected over Callendrier in view of Matsuda et al.

The Examiner stated the following in the Advisory Action dated April 27, 2006:

Continuation of 11 does NOT place the application in condition for allowance because: Applicants arguments are not persuasive, and the rejection is proper for reasons of record. In addition, in response to applicants arguments regarding the invention teaching a document feeder, the recitation "document feeder" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See In re Hirao, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and Kropa v. Robie, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Appellants respectfully request that the Board reverse the Examiner's final rejection of the pending claims.

B. The Cited Prior Art

Callendrier discloses a moving web tension monitoring apparatus of easily fabricated, relatively inexpensive and easily assembled construction including a cantilever mounted strain beam element coupled at the flexurable end thereof through a rigid coupling to one end of the support shaft for the web supporting guide roll. A twin beam type transducer having strain gauges at the flex points of the beams is coupled to the shaft supporting the moving web. The strain gauges are located and electrically connected to measure the radial forces applied to the shaft by the web, independently of the length of the shaft. (Abstract.)

Matsuda discloses a sheet feeding apparatus that feeds sheet media between a feed roller and a separating member pressed into contact with the feed roller, and separates and conveys sheet media held between the feed roller and the separating member one by one by utilizing differences in frictional coefficients between the feed roller, the separating member, and the sheet media. The sheet media are separated and conveyed while periodically changing the pressurizing force of the reverse roller against the feed roller. (Abstract.)

C. Claims 1-47 Are Not Unpatentable Under 35 U.S.C. 103(a)

The present invention provides a document feeder device. The document feeder device includes a frame and at least one cantilevered roller shaft for advancing a document, where an unsupported end of the at least one cantilevered roller shaft floats, a bearing coupled to the at least one cantilevered roller shaft, and a spring coupled to the frame and the bearing. The document feeder device eliminates the need for a rigid frame to support the unsupported end. This decreases the cost of production by eliminating the need for additional frame hardware and/or more rigid frame hardware. (Abstract.) Callendrier in view of Matsuda does not teach or suggest

these features, as discussed below.

Applicants agree with the Examiner that Callendrier does not disclose a bearing coupled to at least one cantilevered roller shaft and a spring coupled to the frame and the bearing. The Examiner has relied on Matsuda to cure the defects of Callendrier. Applicants respectfully maintain that Matsuda does not disclose the "spring coupled to the frame and the bearing," as recited in independent claims 1, 10, 20, 32, and 40.

With regard to Applicants' prior argument that the spring 13 of Matsuda does not couple to the frame 9a and to the bearing 10, but instead couples to a lever 12, the Examiner has noted that all of the elements in Matsuda are connected and/or coupled including the spring, bearing element, and frame. The Examiner has further asserted that if the elements were not coupled together, the invention would not function properly. However, even if the elements of Matsuda were coupled in some form, Matsuda does not explicitly teach or suggest that the spring is coupled to **both** the bearing **and** the frame. Matsuda states that the spring 13 produces "an upward biasing force P3 by which the pivoting end 12a of the lever 12 pushes up the bearing 10," Matsuda does not explicitly show in Figure 1 or describe in the corresponding text where exactly the other end of the spring 13 connects. Because the spring 13 acts upon the lever 12, which acts upon the bearing 10, it would not make sense that one end of the spring 13 connects to the lever 12 and that other end of the spring 13 connects to the bearing 10. Doing so would cancel the biasing force on the bearing 10. This clearly *teaches away* from a teaching or suggestion that the spring of Matsuda connects to the bearing of Matsuda.

The Examiner has noted that the specification of the present invention does not explicitly point out or describe how the spring is connected to the bearing and frame elements. However, page 9, lines 13-15, of the specification clearly states that the "tension spring 160 connects to the

bearing 140" **and** "to the frame support 144."

Therefore, Callendrier in view of Matsuda does not teach or suggest the present invention as recited in independent claims 1, 10, 20, 32, and 40, and these claims are allowable over Callendrier in view of Matsuda.

With regard to dependent claims, dependent claims 2-9, 11-19, 21-31, 33-39, and 41-47 depend from independent claims 1, 10, 20, 32, and 40, respectively. Accordingly, the above-articulated arguments related to independent claim 1, 10, 20, 32, and 40 apply with equal force to claims 2-9, 11-19, 21-31, 33-39, and 41-47, which are thus allowable over the cited references for at least the same reasons as claims 1, 10, 20, 32, and 40.

In view of the foregoing, Applicants respectfully submit that the recited invention is not taught, shown, or suggested by the cited art.

Accordingly, Appellants respectfully request withdrawal of the rejection under 35 U.S.C. 103(a) and respectfully request that the Board reverse the final rejection of claims.

D. Summary of Arguments

For all the foregoing reasons, it is respectfully submitted that claims 1-47 (all of the claims presently in the application) are patentable for defining subject matter, which would not have been unpatentable under 35 U.S.C. 103(a) at the time the subject matter was invented. Thus, Appellants respectfully request that the Board reverse the rejection of all the appealed claims and find each of these claims allowable.

Note: For convenience of detachment without disturbing the integrity of the remainder of pages of this Appeal Brief, Appellants' APPENDICES A-C are

attached on separate sheets following the signatory portion of this Appeal Brief.

Please charge any fee that may be necessary for the continued pendency of this application to Deposit Account No. 50-0563 (IBM Corporation).

Respectfully submitted,
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September 12, 2006
Date

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APPENDIX A

CLAIMS

1. (Previously presented) A document feeder device comprising:

a frame;

at least one cantilevered roller shaft for advancing a document, wherein the at least one cantilevered roller shaft is supported only at one end

a bearing coupled to the at least one cantilevered roller shaft; and

a spring coupled to the frame and the bearing.

2. (Original) The device of claim 1 wherein a supported end of the at least one cantilevered roller shaft is supported at two support locations located outside a document path, wherein the document can be appropriately fed.

3. (Original) The device of claim 1 wherein a need for a rigid frame that directly supports the unsupported end is eliminated.

4. (Original) The device of claim 1 wherein the frame further comprises a main portion and front portion, and wherein the at least one cantilevered roller shaft is coupled to the main portion such that the at least one cantilevered roller shaft does not rely on the front portion for support.

5. (Original) The device of claim 1 wherein at least one gimbal roller is coupled to

the at least one cantilevered roller shaft.

6. (Original) The device of claim 1 further comprising a second roller shaft coupled to the frame.

7. (Original) The device of claim 6 wherein the second roller shaft is cantilevered and wherein a second unsupported end of the second cantilevered roller shaft floats.

8. (Original) The device of claim 7 wherein a second supported end of the second roller shaft is supported at two second support locations located outside a document path, wherein the document can be appropriately fed.

9. (Original) The device of claim 6 wherein at least one gimbal roller is coupled to the second roller shaft.

10. (Previously presented) A document feeder device comprising:

a frame;

at least one cantilevered roller shaft for advancing a document, wherein the at least one cantilevered roller shaft comprises a distal end and a proximal end, and wherein only the proximal end is coupled to the frame such that the distal end floats

a bearing coupled to the at least one cantilevered roller shaft; and

a spring coupled to the frame and the bearing.

11. (Original) The device of claim 10 wherein a need for a rigid frame that directly supports the distal end is eliminated.

12. (Original) The device of claim 10 wherein the at least one cantilevered roller shaft is supported at two support locations at the proximal end, wherein the two support locations are located outside a document path.

13. (Original) The device of claim 10 wherein the frame further comprises a main portion and front portion, and wherein the at least one cantilevered roller shaft is coupled to the main portion such that the at least one cantilevered roller shaft does not rely on the front portion for support.

14. (Original) The device of claim 10 wherein at least one gimbal roller is coupled to the at least one cantilevered roller shaft.

15. (Original) The device of claim 10 further comprising a second roller shaft coupled to the frame, the second roller shaft having a second distal end and a second proximal end.

16. (Original) The device of claim 15 wherein the second roller shaft is cantilevered and is coupled to the frame such that the second distal end floats.

17. (Original) The device of claim 16 wherein the second roller shaft is supported at two support locations at the second proximal end, wherein the two support locations are located

outside a document path.

18. (Original) The device of claim 16 wherein the frame further comprises a main portion and front portion, and wherein the second roller shaft is coupled to the main portion such that the second roller shaft does not rely on the front portion for support.

19. (Original) The device of claim 15 wherein at least one gimbal roller is coupled to the second roller shaft.

20. (Previously presented) A printer system comprising:

a frame;

at least one cantilevered roller shaft for advancing a document, wherein the at least one cantilevered roller shaft comprises a distal end and a proximal end, wherein only the proximal end is coupled to the frame such that the distal end floats

a bearing coupled to the at least one cantilevered roller shaft; and

a spring coupled to the frame and the bearing.

21. (Original) The system of claim 20 wherein a need for a rigid frame that directly supports the distal end is eliminated.

22. (Original) The system of claim 20 wherein the at least one cantilevered roller shaft is supported at two support locations at the proximal end, wherein the two support locations are located outside a document path.

23. (Original) The system of claim 20 wherein the frame further comprises a main portion and front portion, and wherein the at least one cantilevered roller shaft is coupled to the main portion such that the at least one cantilevered roller shaft does not rely on the front portion for support.

24. (Original) The system of claim 20 wherein at least one gimbal roller is coupled to the at least one cantilevered roller shaft.

25. (Original) The system of claim 20 further comprising a drive device coupled to the frame, wherein the drive device rotates the at least one shaft to advance the document.

26. (Original) The system of claim 20 further comprising a second roller shaft coupled to the frame, the second roller shaft having a second distal end and a second proximal end.

27. (Original) The system of claim 26 wherein the second roller shaft is cantilevered and is coupled to the frame such that the second distal end floats.

28. (Original) The system of claim 27 wherein the second roller shaft is supported at two support locations at the second proximal end, wherein the two support locations are located outside a document path.

29. (Original) The system of claim 27 wherein the frame further comprises a main

portion and front portion, and wherein the second roller shaft is coupled to the main portion such that the second roller shaft does not rely on the front portion for support.

30. (Original) The system of claim 26 wherein at least one gimbal roller is coupled to the second roller shaft.

31. (Original) The system of claim 26 further comprising a drive device coupled to the frame, wherein the drive device rotates the second roller shaft to advance the document.

32. (Previously presented) A method for feeding a document through a printer, the method comprising

providing at least one cantilevered roller shaft in the printer for advancing the document;

coupling only a supported end of the at least one cantilevered roller shaft to a frame of the printer such that an unsupported end of the at least one cantilevered roller shaft floats

coupling a bearing to the at least one cantilevered roller shaft; and

coupling a spring to the frame and the bearing.

33. (Previously presented) The method of claim 32 further comprising

providing at least one roller coupled to the at least one cantilevered roller shaft;

inserting the document in a document path of the printer until the document reaches the at least one roller; and

rotating the at least one roller to advance the document along the paper path.

34. (Previously presented) The method of claim 33 further comprising removing the document from the document path.

35. (Previously presented) The method of claim 32 further comprising providing a second roller shaft for advancing the document.

36. (Previously presented) The method of claim 35 further comprising coupling the second roller shaft to the frame of the printer.

37. (Previously presented) The method of claim 35 further comprising coupling a second supported end of the second roller shaft to the frame of the printer such that a second unsupported end of the second cantilevered roller shaft floats.

38. (Previously presented) The method of claim 36 further comprising

providing at least one roller coupled to the at least one cantilevered roller shaft;

providing at least one second roller coupled to the second roller shaft;

inserting the document in a document path of the printer until the document reaches the at least one roller and the at least one second roller; and

rotating the at least one roller and the at least one second roller to advance the document along the paper path.

39. (Previously presented) The method of claim 38 further comprising removing the document from the document path.

40. (Previously presented) A method for feeding a document through a printer, the method comprising

providing at least one cantilevered roller shaft in the printer for advancing the document, wherein the at least one cantilevered roller shaft comprises a distal end and a proximal end;

coupling only the proximal end to a frame of the printer such that the distal end floats

coupling a bearing to the at least one cantilevered roller shaft; and

coupling a spring to the frame and the bearing.

41. (Previously presented) The method of claim 40 further comprising

providing at least one roller coupled to the at least one cantilevered roller shaft;

inserting the document in a document path of the printer until the document reaches the at least one roller; and

rotating the at least one roller to advance the document along the paper path.

42. (Previously presented) The method of claim 41 further comprising removing the document from the document path.

43. (Previously presented) The method of claim 40 further comprising providing a second roller shaft for advancing the document, wherein the second roller shaft comprises a second distal end and a second proximal end.

44. (Previously presented) The method of claim 43 further comprising coupling the

second roller shaft to the frame of the printer.

45. (Previously presented) The method of claim 43 further comprising coupling the second proximal end to the frame of the printer such that the second roller shaft is cantilevered and the second distal end floats.

46. (Previously presented) The method of claim 44 further comprising

providing at least one roller coupled to the at least one cantilevered roller shaft;

providing at least one second roller coupled to the second roller shaft;

inserting the document in a document path of the printer until the document reaches the at least one roller and the at least one second roller; and

rotating the at least one roller and the at least one second roller to advance the document along the paper path.

47. (Previously presented) The method of claim 46 further comprising removing the document from the document path.

APPENDIX B

EVIDENCE

(NONE)

APPENDIX C

RELATED PROCEEDINGS

(NONE)